

AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Cancelled) .

2. (Cancelled) .

3. (Cancelled) .

4. (currently amended) A frequency conversion apparatus comprising:

a filter having a fixed cut-off frequency for restricting a band of a reception signal so as to selectively pass only a first frequency band component;

an isolation amplifier for amplifying the reception signal having passed through the filter;

a variable filter having a variable cut-off frequency for further restricting the band of the reception signal having been amplified by the amplifier, so as to cut off at least part of the first frequency band component and thereby to selectively pass only a second frequency band component; and

a mixer for mixing the reception signal having passed through the variable filter with a local oscillation signal,

wherein the variable filter is built by serially connecting together a variable low-pass filter for selectively passing only a low band component of a signal inputted thereto and

a variable high-pass filter for selectively passing only a high band component of a signal inputted thereto, the cut-off frequency of the variable filter being controlled to vary according to a reception channel signal, and wherein the amplifier cuts off reflected waves that fall outside a pass band of the variable filter.

5. (currently amended) A frequency conversion apparatus comprising:

a filter having a fixed cut-off frequency for restricting a band of a reception signal, so as to selectively pass only a first frequency band component;

an isolation amplifier for amplifying the reception signal having passed through the filter;

a variable filter having a variable cut-off frequency for further restricting the band of the reception signal having been amplified by the amplifier so as to cut off at least part of the first frequency band component and thereby to selectively pass only a second frequency band component; and

a mixer for mixing the reception signal having passed through the variable filter with a local oscillation signal,

wherein the variable filter is a variable high-pass filter for selectively passing only a high-band component of a signal inputted thereto, the cut-off frequency of the variable filter being controlled to vary according to a reception signal, and

wherein the amplifier cuts off reflected waves that fall outside a pass band of the variable filter.

6. (currently amended) A frequency conversion apparatus as claimed in claim 4,

wherein the cut-off frequency of the variable filter is controlled by ~~use of~~ a phase-locked loop circuit that also controls a frequency of the local oscillation signal.

7. (currently amended) A frequency conversion apparatus as claimed in claim 4,

wherein the cut-off frequency of the variable filter is controlled by a voltage synthesizing method that chooses among a plurality of predetermined voltages.

8. (Cancelled).

9. (Cancelled).

10. (Cancelled).

11. (currently amended) A method of reducing unwanted signals in a frequency conversion apparatus comprising:

restricting a band of a reception signal with a filter having a fixed cut-off frequency so as to selectively pass only a first frequency band component;

amplifying the reception signal with an isolation amplifier, having passed through the filter;

restricting the band of the reception signal having been amplified with a variable filter having a variable cut-off frequency, so as to cut off at least part of the first frequency band component and thereby to selectively pass only a second frequency band component; and

mixing the reception signal having passed through the variable filter with a local oscillation signal,

wherein the variable filter built by serially connecting together a variable low-pass filter for selectively passing only a low band component of a signal inputted thereto and a variable high-pass filter for selectively passing only a high band component of a signal inputted thereto, the cut-off frequency of the variable filter being controlled to vary according to a reception channel signal, and

wherein the amplifier cut off reflected waves that fall outside a pass band of the variable filter.

12. (currently amended) A method of reducing unwanted signals in a frequency conversion apparatus comprising:

restricting a band of a reception signal with a filter having a fixed cut-off frequency, so as to selectively pass only a first frequency band component;

amplifying the reception signal with an isolation amplifier, having passed through the filter;

restricting the band of the reception signal having been amplified with a variable filter having a variable cut-off frequency, so as to cut off at least part of the first frequency band component and thereby to selectively pass only a second frequency band component; and

mixing the reception signal having passed through the variable filter with a local oscillation signal,

wherein the variable filter is a variable high-pass filter for selectively passing only a high-band component of a signal inputted thereto, the cut-off frequency of the variable filter being controlled to vary according to a reception signal, and

wherein the amplifier cuts off reflected waves that fall outside a pass band of the variable filter.

13. (currently amended) The method as claimed in claim 11,

wherein the cut-off frequency of the variable filter is controlled by ~~use of~~ a phase-locked loop circuit that also controls a frequency of the local oscillation signal.

14. (currently amended) The method as claimed in claim 11,

wherein the cut-off frequency of the variable filter is controlled by a voltage synthesizing method that chooses among a plurality of predetermined voltages.

15. (currently amended) A frequency conversion apparatus as claimed in claim 5,

wherein the cut-off frequency of the variable filter is controlled by ~~use of~~ a phase-locked loop circuit that also controls a frequency of the local oscillation signal.

16. (currently amended) A frequency conversion apparatus as claimed in claim 5,

wherein the cut-off frequency of the variable filter is controlled by a voltage synthesizing method that chooses among a plurality of predetermined voltages.

17. (currently amended) The method as claimed in claim 12, wherein the cut-off frequency of the variable filter is controlled by ~~use of~~ a phase-locked loop circuit that also controls a frequency of the local oscillations signal.

18. (currently amended) The method as claimed in claim 12, wherein the cut-off frequency of the variable filter is controlled by a voltage synthesizing method that chooses among a plurality of predetermined voltages.